3. A method as in claim 2, wherein said enabling comprises actuating a gate that is connected between each said photocarrier integrator and said diode.

4. A method as in claim 3, further comprising, after said enabling, detecting a number of carriers accumulated in said diode.

Cont. A1

5. A method as in claim 3, wherein said diode is pinned photodiode, and further comprising, after said enabling, detecting a number of carriers accumulated in said pinned photodiode.

6. A method as in claim 2, wherein there are four of said photocarrier integrators, and said successively enabling comprises using a first integrator to accumulate carriers between a time 0 and $\pi/2$, a second photocarrier integrators to integrate between $\pi/2$ and π; a third photocarrier integrator to integrate between π and $3\pi/2$, and a fourth photocarrier integrator to integrate between $3\pi/2$ and 2π time slots.

7. A method as in claim 2, further comprising detecting light from said photodiode which corresponds to a phase shift.

8. A system, comprising:

a pinned photodiode having a photodiode area;

a plurality of gates, each of said plurality of gates having one end coupled to said photodiode area; and

a plurality of photocarrier integrator elements, each of said photocarrier integrator elements coupled to the other end of each of said plurality of gates.

Cont. a1

9. A system as in claim 8, further comprising a control input on each of said plurality of gates, enabling connection of a respective photocarriers integrator elements to said photodiode area.

10. A system as in claim 9, further comprising a controller element which drives said control input controlling said plurality of gates such that no more one of said control element is active at any time.

11. A system as in claim 10, wherein there are four of said photocarrier integrator elements, and wherein said controller element successively enables a first integrator to accumulate carriers between a time 0 and $\pi/2$, a second

photocarrier integrator to integrate between $\pi/2$ and π; a third photocarrier integrator to integrate between π and $3\pi/2$, and a fourth photocarrier integrator to integrate between $3\pi/2$ and 2π time slots.

Cont. a1

12. A method, comprising:

accumulating photo carriers in each of a plurality of photocarrier integrators at different times; and

sampling said photo carriers from said photocarrier integrators in the common to die.

13. A method as in claim 12, further comprising controlling each of said photocarrier integrators to be connected to said photodiode at different times.

14. A method as in claim 13, wherein said controlling comprises enabling a gate.

15. A method as in claim 14, wherein there are four of said photocarrier integrators, and wherein said enabling comprises successively enabling a first integrator to accumulate carriers between a time 0 and $\pi/2$, a second photocarrier integrator to integrate between $\pi/2$ and π; a third photocarrier

integrator to integrate between πand 3π/2, and a fourth photocarrier integrator to integrate between 3π/2 and 2π time slots.

16. A method as in claim 12, wherein there are four of said photo carrier integrators, and said sampling comprises sampling photo carriers which are 90 degrees out of phase with one another.

Cont. C1

17. A method, comprising:

sampling a plurality of different samples of light in a photodiode, said plurality of different samples being 90 degrees out of phase with one another.

18. A method as in claim 17, further comprising detecting a phase shift of the detecting light.

19. A method as in claim 17, wherein there are four different gates attached to the photodiode each detecting a different sample.

20. A method as in claim 17, wherein there are four photocarrier integrators, and wherein said sampling comprises

Cont'd a1

successively enabling a first integrator to accumulate carriers between a time 0 and $\pi/2$, a second photocarrier integrator to integrate between $\pi/2$ and π; a third photocarrier integrator to integrate between π and $3\pi/2$, and a fourth photocarrier integrator to integrate between $3\pi/2$ and 2π time slots.